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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,895	12/13/2004	Masahiro Inoue	F-8488	5714
28107	7590	10/11/2006	EXAMINER	
JORDAN AND HAMBURG LLP 122 EAST 42ND STREET SUITE 4000 NEW YORK, NY 10168			SCHINDLER, DAVID M	
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			2862	

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/517,895	Applicant(s) INOUE, MASAHIRO	
	Examiner David Schindler	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,14,16,18 and 19 is/are rejected.
- 7) ☒ Claim(s) 3-13,15 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/13/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 16, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al. (Watanabe) (5,914,548).

As to Claim 1,

Watanabe discloses a rolling element, a non-rolling element disposed concentrically with the rolling element, and a rotation detector for outputting an input exciting voltage by converting it to an induced voltage according to a relative rolling state of the rolling element and the non-rolling element ((Figure 4) and (Column 6, Lines 40-54 and lines 66-67) and (Column 7, Lines 1-37) and (Column 8, Lines 50-67) and (Column 9, Lines 19-25 and lines 55-67) and (Column 11, Lines 31-39) and (Column 15, Lines 11-21)).

As to Claim 2,

Watanabe discloses a rotor provided in the rolling element; a stator provided in the non-rolling element, and an exciting winding and output windings wound to the stator, wherein the output windings induce a voltage according to a gap permeance between the rotor and the stator in response to the exciting voltage inputted to the exciting winding ((Figure 4) and (Column 4, Lines 44-62) and (Column 6, Lines 40-54

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and lines 66-67) and (Column 7, Lines 1-37) and (Column 9, Lines 19-25 and lines 55-67) and (Column 15, Lines 11-21)).

As to Claim 16,

Watanabe discloses a signal processing unit for processing output signals from the rotation detector (Column 9, Lines 4-19).

As to Claim 19,

Watanabe discloses the rotation detector includes a rotor provided in the rolling element, a stator provided in the non-rolling element, an exciting winding and output windings wound to the stator, and further includes a resolver which induces a voltage according to a gap permeance between the rotor and the stator in response to an exciting voltage inputted to the exciting winding from the output windings ((Figures 2 and 4) and (Column 6, Lines 40-54 and lines 66-67) and (Column 7, Lines 1-37) and (Column 8, Lines 50-67) and (Column 9, Lines 19-25 and lines 55-67) and (Column 11, Lines 31-39) and (Column 15, Lines 11-21)).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (Watanabe) (5,914,548) in view of Bochet (2004/0062459).

As to Claim 14,

Watanabe discloses as explained above.

Watanabe does not disclose a radio transmitter for radio-transmitting signals outputted from the rotation detector to a signal processing unit provided outside.

Bochet discloses a radio transmitter for radio-transmitting signals outputted from the rotation detector to a signal processing unit provided outside (Abstract).

It would have been obvious to a person of ordinary skill in the art to modify Watanabe to include a radio transmitter for radio-transmitting signals outputted from the rotation detector to a signal processing unit provided outside as taught by Bochet in order to allow for a device that may be easily rotated (Page 1, Paragraph [0020]).

As to Claim 18,

Watanabe does not disclose a signal processing unit for processing output signals from the radio transmitter.

Bochet discloses a signal processing unit for processing output signals from the radio transmitter (Abstract).

It would have been obvious to a person of ordinary skill in the art to modify Watanabe to include a signal processing unit for processing output signals from the radio transmitter as taught by Bochet in order to allow for a device that may be easily rotated (Page 1, Paragraph [0020]).

Allowable Subject Matter

6. Claim 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is an examiner's statement of reasons for allowance:

As to Claim 3,

The primary reason for the allowance of claim 3 is the inclusion of the rotor includes a flat portion formed on a circumference of the surface in the rolling element which opposes the plurality of polar teeth provided in the non-rolling element. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claim 4,

The primary reason for the allowance of claim 4 is the inclusion of a flat portion is formed on a circumference of the outer peripheral shoulder. It is these features found in

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the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claim 5,

The primary reason for the allowance of claim 5 is the inclusion of the rotor is provided in an outer peripheral surface of areas of the two inner rings, which face each other in the axial direction. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claim 8,

The primary reason for the allowance of claim 8 is the inclusion of a hub wheel, inner rings fitted in an outer periphery of the hub wheel, and a nut mounted on one end side of the hub wheel in an axial direction for connecting the inner rings to the hub wheel, the nut serves as the rotor. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claim 9,

The primary reason for the allowance of claim 9 is the inclusion of said rolling element comprises: a hub wheel with a flange provided in an outer periphery closer to an end of one spindle in an outward-radial direction while having an outer peripheral surface with a small diameter in an outer peripheral surface on an end of vehicle inner side; an inner ring mounted outside the small-diameter outer peripheral surface of said hub wheel; a nut spindle portion formed on the vehicle inner end of said hub wheel; and

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a nut being helically mounted on said nut spindle portion, said rotor is formed of said nut; said non-rolling element is an outer ring disposed on an outer periphery side of said hub wheel; a cap is mounted in a vehicle inner side opening of said outer ring; and said stator is fixed to an inner periphery of said cap and said stator opposes said nut in a radial direction. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claim 10,

The primary reason for the allowance of claim 10 is the inclusion of said rolling element comprises: a hub wheel with a flange provided in an outer periphery closer to an end of one spindle in an outward-radial direction while having outer peripheral surfaces with a large diameter and a small diameter in an outer peripheral surface on an end of said vehicle inner side; and inner rings mounted outside the small-diameter outer peripheral surface of said hub wheel; said non-rolling element is an outer ring disposed on an outer periphery of said hub wheel; said stator is mounted in a center region of an inner peripheral surface of said outer ring in an axial direction; and said rotor is formed by notches provided in a plurality of areas on an circumference of a large-diameter outer peripheral surface with a large diameter of said hub wheel, which opposes said stator in a radial direction. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claims 11,

The primary reason for the allowance of claim 11 is the inclusion of said rolling element comprises: a hub wheel with a flange provided in an outer periphery closer to an end of one spindle in an outward-radial direction while having outer peripheral surfaces with a large diameter and a small diameter in an outer peripheral surface on an end of said vehicle inner side and having an inner ring raceway groove in said large-diameter outer peripheral surface; inner rings mounted outside said small-diameter outer peripheral surface of said hub wheel; said non-rolling element is an outer ring disposed concentrically with said two inner rings in an outward-radial direction while having two raceway grooves in an inner peripheral surface being separated away from each other in an axial direction opposing each raceway groove of said two inner rings; a vehicle outer-side raceway groove of said outer ring is made to have a larger diameter than that of a vehicle inner-side raceway groove, the inner ring raceway groove of said hub wheel is made to have a larger diameter than that of the raceway groove of said inner ring, and PCD of said vehicle outer side ball group, among two groups of the vehicle inner side and vehicle outer side mounted in between said each raceway groove, is made to have a larger diameter than that of PCD of a vehicle inner side ball group; said stator is mounted in a canter region of an inner peripheral surface of said outer ring in an axial direction; and said rotor is formed by notches provided in a plurality of areas on an circumference of an outer peripheral surface region in an outer peripheral surface of said hub wheel, which opposes said stator in a radial direction. It is these features found in the claim, as they are claimed in the combination that has not

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been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claim 12,

The primary reason for the allowance of claim 12 is the inclusion of a generator for generating a voltage in accordance with rotation of said rolling element and inputting the voltage as an input exciting voltage to said rotation detector. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claim 15,

The primary reason for the allowance of claim 15 is the inclusion of a generator for generating a voltage in accordance with rotation of said rolling element and inputting the voltage as an input exciting voltage to said rotation detector while supplying it as a driving voltage to said radio transmitter.. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Schindler whose telephone number is (571) 272-2112. The examiner can normally be reached on M-F (8:00 - 5:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David Schindler
Examiner
Art Unit 2862

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